

**REMARKS**

The Official Action mailed March 12, 2003, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to July 14, 2003. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on June 14, 2000, September 7, 2000, October 12, 2000, December 1, 2000, September 20, 2001, and February 28, 2002.

The Applicants note the *partial* consideration of the Information Disclosure Statement (IDS) filed on April 17, 2000. It appears that the Examiner inadvertently omitted an indication of consideration of U.S. Patent No. No. 5,176,789 to Yamazaki et al. The Applicants respectfully request that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of the '789 patent.

Claims 1-12, 14, 15, 18 and 20-29 are now pending in the present application, of which claims 1-4, 14, 15, 28 and 29 are independent. Claims 1-3, 15, 28 and 29 have been amended to correct minor typographical errors and to better recite the features of the present invention. For the reasons set forth in detail below, all claims are believed to be in condition for allowance.

Paragraph 2 of the Official Action rejects claim 15 for lack of antecedent basis for the term "said oxide conductive layer." In response, the Applicants have amended claim 15 to change "said oxide conductive layer" to "said black colored conductive layer." The amendment is merely clarifying in nature, and should not in any way affect the scope of protection afforded the claims for infringement purposes, particularly under the Doctrine of Equivalents. The Applicants respectfully submit that claim 15 is definite as amended. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 are in order and respectfully requested.

Paragraph 4 of the Official Action rejects claims 1, 5, 7, 9, 14, 18 and 20-29 as obvious based on the combination of U.S. Patent No. 5,706,064 to Fukunaga et al. and U.S. Patent No. 5,536,950 to Liu et al. Paragraph 7 of the Official Action rejects claims 2 and 11 as obvious based on the combination of Fukunaga, Liu, and U.S. Patent No.

6,221,140 to Kobayashi et al. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Fukunaga and Liu do not teach or suggest that pixel electrode 412 of Fukunaga is light reflective. The Official Action asserts that Fukunaga teaches "forming a light reflective pixel electrode 412 by patterning the second conductive layer (column 26, lines 46-48)" (page 3, Paper No. 18). The Applicants respectfully disagree and traverse the Examiner's assertion. In column 26, lines 46-48, Fukunaga teaches that "ITO is sputtered with a thickness of 150 nm on the functional layer and is subjected to patterning, to form a pixel electrode 412." It is well known that ITO is transparent. Therefore, pixel electrode 412 of Fukunaga is not light reflective. Liu does not cure the deficiencies in Fukunaga. The Official Action relies on Liu to allegedly teach etching an embedded conductive layer to expose a portion of the insulating layer. Fukunaga and Liu, either alone or in combination, do not teach or suggest that pixel electrode 412 of Fukunaga is light reflective.

Kobayashi does not cure the deficiencies in Fukunaga and Liu. The Official Action relies on Kobayashi to allegedly teach forming an oxide conductive layer by a spin coating method to cover a substrate and an opening (page 6, Paper No. 18). Fukunaga, Liu and Kobayashi, either alone or in combination, do not teach or suggest that pixel electrode 412 of Fukunaga is light reflective. Since Fukunaga, Liu and Kobayashi do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Since Fukunaga, Liu and Kobayashi do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are in order and respectfully requested.

Paragraph 5 of the Official Action rejects claims 3, 6, 8, 10 and 20-26 as obvious based on the combination of Fukunaga and U.S. Patent No. 5,990,542 to Yamazaki. Paragraph 6 of the Official Action rejects claim 15 as obvious based on the combination of Fukunaga, Yamazaki, and U.S. Patent No. 6,043,149 to Jun. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness. The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Fukunaga and Yamazaki do not teach or suggest forming an opening in an insulating layer to expose a portion of an active layer at a bottom of the opening. Specifically, the prior art does not teach or suggest extending the opening in Fukunaga in insulating layer 413 (Fig. 22) through  $n^+a$ -Si layer 408b and source electrode 409 to expose a portion of active layer 406 at a bottom of the opening (Fig. 24D).

The Official Action concedes that Fukunaga "does not disclose the opening extending to the active layer" (page 5, Paper No. 18), and asserts that it would have been obvious to form an opening through the insulating film to expose a portion of the active layer since Yamazaki teaches a direct contact between a pixel electrode and an active layer. The Applicants respectfully disagree and traverse the Examiner's assertion. Fukunaga expressly teaches that "source and drain electrodes 409 and 410 are formed on the  $n^+a$ -Si layers 408a and 408b, such that the electrode cover an end portion of the  $a$ -Si active layer 406" (column 19, lines 24-26). The teaching appears to

be entirely opposite to the modification proposed in the Official Action. Nothing in Yamazaki teaches or suggests extending the opening in Fukunaga in insulating layer 413 through n<sup>+</sup>a-Si layer 408b and source electrode 409 to expose a portion of active layer 406. Since Fukunaga and Yamazaki do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Fukunaga and Yamazaki or to combine reference teachings to achieve the claimed invention. The prior art does not teach or suggest why one with ordinary skill in the art would want to extend the opening in Fukunaga in layer 413 through n<sup>+</sup>a-Si layer 408b and source electrode 409 to expose active layer 406. The proposed modification to Fukunaga would render the Fukunaga device inoperable. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See MPEP § 2143.

Jun does not cure the deficiencies in Fukunaga and Yamazaki. The Official Action relies on Jun to allegedly teach polishing an embedded conductive layer by employing a chemical mechanical polishing (page 6, Paper No. 18). Fukunaga, Yamazaki and Jun, either alone or in combination, do not teach or suggest forming an opening in an insulating layer to expose a portion of an active layer at a bottom of the opening.

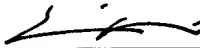
For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are in order and respectfully requested.

Paragraph 8 of the Official Action rejects claims 4 and 12 as obvious based on the combination of Fukunaga, Jun, and Kobayashi. Kobayashi does not cure the deficiencies in Fukunaga and Jun. The Official Action relies on Kobayashi to allegedly teach forming an oxide conductive layer by a spin coating method to cover a substrate and an opening (page 6, Paper No. 18). Fukunaga, Jun and Kobayashi, either alone or in combination, do not teach or suggest forming an opening in an insulating layer to expose a portion of an active layer at a bottom of the opening. Since Fukunaga, Liu,

Jun and Kobayashi do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

  
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